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AUTHOR	Gaies, Stephen J.
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ABSTRACT

The language learner is activated by exposure to primary linguistic data in the target language, categorizes that data and deduces from it a system of rules or hypotheses. When the language acquisition process is successful, as is virtually always the case in first language acquisition, the learner's rule system corresponds to that of the speech community at large. This is not the case of the second language learner. Adults attempting to learn a second language end up with a rule system which differs to one degree or another from the grammar of the target language. The learner's system of sentence-generating rules, which is very different from the grammar of his native language but not identical to the full grammar of the target language community, is called "interlanguage." When children are learning their native language, they are not exposed to truly random linguistic data; adults attempt to control and simplify their syntax when addressing them. The present study shows that a similar phenomenon occurs in second language learning. Native speakers simplify their language when talking to non-native speakers. Teachers, too, simplify their language according to the students' competence. The syntax of the oral classroom language of eight ESL (English as a second language) teacher-trainees was examined. The analysis of the data revealed that the teachers' classroom language was a potential factor in shaping the development of interlanguage. (Author/CFM)

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GRADATION IN FORMAL SECOND LANGUAGE INSTRUCTION AS A FACTOR IN THE DEVELOPMENT OF INTERLANGUAGE

Stephen J. Gaies
Indiana University

The development of the concept "interlanguage" in applied linguistic research has roughly coincided with the fundamental theoretical re-orientation which has dominated language acquisition studies during the last fifteen years. The notion that adult second language learners are actively involved in the acquisition process, that they process target language data in the context of their linguistic and cognitive experiences, their learning strategies, and their communicative needs, is intimately related to the nativist claim that first language acquisition is shaped by the innate neurological structure and cognitive predisposition to learn language which are the uniquely human genetic endowment possessed by every child. Language learning is not, as the behaviorists claimed, merely the accumulation of a series of stimulus-response associations, a process in which the learner's participation is limited to imitation, practice, habit-formation, and some vague form of analogy. Instead, according to the nativists, the language learner, whose acquisition device---his/her LAD or "black box"---is activated by exposure to primary linguistic data in the target language, categorizes that data and deduces from it a system of rules or hypotheses. The hypotheses which the learner forms about the target language undergo constant revision; it is fair to conceive of the process as consisting of a series of grammars or rule-systems which the learner develops to contend with increasing exposure to the target language and which he/she modifies at least partially in response to feedback received from linguistic interaction with speakers of the target language. When the language acquisition process is successful---and with very few exceptions, this is always the case in first language acquisition---the learner's rule-system corresponds to that of the speech community at large. In other words, the learner reaches the point at which he/she shares the linguistic competence of the speech community.

This account of the first language acquisition process has wide currency among applied linguists. It is also thought by many to characterize the nature of second language learning. It is not the case, however, that successful second language learning is as universal as the attainment of competence in a first language. For what is thought to be a number of reasons, adults attempting to learn a second language end up with a rule-system which differs to one degree or another from the grammar of the target language. This approximation of the target language grammar is what the concept interlanguage refers to. It is a system of sentence-generating rules which is very different from the grammar of the learner's native language but not identical to the full grammar of the target language community. The phenomenon of interlanguage is multidimensional in the sense that it appropriately characterizes the second language learner's phrase structure and transformational rules, his/her lexicon, and his/her system of morphophonemics in the target language. If interlanguage is understood in this

sense, then the corresponding definition of "error analysis" is an investigation of the ways in which and the reasons for which a second language learner's output in the target language differs from the target language norm; to use a very simple example, error analysis describes how and explains why the utterance *"This the book which I bought it" differs from "This is the book which I bought."

A working assumption of current psycholinguistic research is that because the language learner possesses the innate ability to acquire language, he/she can deduce regularities and rules from that is essentially conceived of as a random corpus of primary linguistic data. Even though this data will contain, as will any sample of actual linguistic performance, surface structures not derivable from the target language grammar, it can be processed by the learner and used as the basis for the learner's development of competence in the language. The nature and role of primary linguistic data as explained in the behavioral theory of language learning were, in the nativist view, among the weakest points in that approach to the question of language acquisition. If language acquisition is reduced to a process of overlearning stimulus-response patterns, how, argued the nativists, can a learner exposed to a finite sample of imperfect linguistic performance develop a system of rules which will enable him/her to generate an infinite number of grammatical sentences and no ungrammatical ones, as the definition of linguistic competence is usually stated? Furthermore, how can one explain the fact that learners produce utterances which simply cannot be viewed as even radically imperfect imitations of adult utterances without acknowledging that learners actively process the primary linguistic data to which they are exposed?

There is undeniably a great deal of merit to the nativist approach to the relationship between the learner and the raw linguistic data to which he/she is exposed. As has been pointed out recently (Landes, 1975), however, the claim that the first language learner is exposed to <u>random</u> linguistic data is not wholly precise; it is, in fact, inaccurate beyond the degree of mere hyperbole. There exists an accumulating body of empirical evidence which indeed suggests that in terms of syntax---and it should be stated that from this point on, the concern of the present study is with syntax alone---the spoken language addressed to young children by adults can be characterized as consistently adjusted in the direction of greater simplicity. In other words, in comparison to adult-adult verbal interactions, the language addressed by adults to young children is syntactically less complex. It might be supposed that this greater simplicity represents a conscious effort on the part of adults to communicate more effectively with their less proficient interlocutors. By the time children reach age ten, if not earlier, the language addressed to them is in terms of syntactic complexity indistinguishable from that used by adults in communicating with other adults.

Now, the exact schedule according to which adult linguistic input to children changes syntactically from lesser to greater complexity has not as yet been fully elaborated. In addition, the effect of this structuring of the primary linguistic data to which children are exposed through their verbal interactions with adults is still a matter for

speculation, as is the relative importance of adult linguistic input versus input from child-child interactions and adult linguistic performance not specifically addressed to children. Nonetheless, the phenomenon is sufficiently manifest that in describing particular stages of transitional competence through which first language learners typically pass, it would seem fruitful to account in some way for the changing nature of the data on which learners' hypotheses are at least partially based. To put it another way, one must wonder whether it is sufficient to account for successive grammars developed by the first language learner by comparing them with one constant norm---i.e., a full adult-adult model.

In terms of adult second language learning, the same question must be asked because as in the case of the first language learner, the adult second language learner is exposed to successively more complex samples of the target language as his interlocutors perceive his/her proficiency to be increasing. This is the view of Ferguson (1971), who postulated the principle that speech communities tend to have conventional varieties of "simplified" speech which speakers regard as appropriate for use when their interlocutors do not have full understanding of the language in use. One variety, to which the name "Foreigner Talk" has been given, is, like "baby talk," thought to be the product of conscious choices on the part of speakers of a language and, according to Ferguson (1975), is "optimally characterized by an additional set of rules added to the grammar of the language being simplified" (p. 1). "Foreigner Talk" is generally felt to be a transitional form of communication between linguistic unequals; "the usual outcome of the use of foreigner talk is that one side or the other acquires an adequate command of the other's language" (Ferguson, 1971, p. 144). In some situations of language contact, however, the circumstances may be such that full proficiency in the target language is viewed by non-fluent speakers as unnecessary or unattainable (Richards, 1972). In these cases, Foreigner Talk may serve as the basis of an incipient pidgin.

The concern here, however, is not with radically unsuccessful second language learning. The question is rather whether as in first language learning, the syntactic simplifications made by speakers of a language in addressing adult learners of the language in a formal instructional setting---i.e., the adjustments which foreign language teachers make in the target language---move progressively towards an approximation of the full target language norm. Preliminary evidence for this can be found in the work of Henzl (1975).

Henzl attempted to formulate a general description of what she called a Foreign Language Teacher Register on the basis of an examination of the ways in which foreign language teachers addressed audiences which had been graded according to their proficiency in the target language. The languages involved were Czech, German, and English. The eleven subjects presented two language samples controlled for content. Each subject presented each sample three times: once for a class of beginners, once for a group of advanced students of the language, and once for a group of native speakers of the language.

Henzl's analysis of the recorded language samples probed phonological, lexical, and syntactic features of the subjects' narrations. In terms of syntax, she found a tendency on the part of the subjects to use short, well-formed sentences when addressing learners of the target language. The oral presentations made to the less fluent groups were syntactically less complex than those made to the native speaker groups. Mean sentence length and frequency of subordination tended to decrease progressively with the lesser competence in the language of an audience. The teachers of Czech and German used less than the full complement of case distinctions when addressing learners of those languages, and in all three languages, a preference was shown by the subjects for present tense, indicative, and active verb forms in the presentations made to nonnative speaker audiences. Henzl concluded that "teachers of foreign languages do make systematic adjustments when they are talking to their students, and...the speech modifications vary with the level of the students' competence in the language" (p. 9).

Henzl's study has been reviewed in some detail because the study to be reported on here is in many ways similar to it. In the present study, the syntax of the oral classroom language of eight ESL teacher-trainees was examined. The subjects were teacher-trainees enrolled in a Practicum course offered by the Program in Applied Linguistics at Indiana University. Three of the subjects were highly proficient nonnative speakers of English who had had some experience teaching English in their home countries. The others were native speakers of English whose prior teaching experience was quite limited.

The subjects taught adult ESL classes as part of the Practicum course requirements. These classes, which are offered each semester, meet hourly four evenings a week for a period of ten weeks. In the Fall of 1975, when the data for the present study was collected, instruction was offered at four different levels. Each of these four levels was taught by two teachers, who shared the teaching responsibilities equally. It should be mentioned that the subjects were given a great deal of freedom in making decisions about curricular goals, teaching materials and techniques, and classroom management practices.

Each of the subjects agreed to let the researcher tape three of his/her classes: one each at the beginning, middle, and end of the ten-week period. In addition, the weekly meetings of the Practicum class, in which the subjects and their instructors discussed general and specific problems and approaches in teaching English to speakers of other languages, were taped so that samples of the language which the subjects used with each other---that is, among linguistic peers---could be obtained.

From each of the twenty-four classroom tapes, a 500-word sample was selected for analysis. In each case, the sample consisted of the first 500 words contained in sentence-length utterances spoken by the teacher during the actual class period. For the baseline language data collected in the Practicum class meetings, the first 500 words spoken in sentence-length utterances by a subject to the class as a whole and with the class' attention constituted the sample for that subject.

The samples were transcribed and analyzed by the researcher. Analysis proceeded by segmentation of the samples into T-units. A T-unit is defined as "one main clause plus any subordinate clause or nonclausal structure that is attached to or embedded in it" (Hunt, 1970, p. 4). This unit of syntactic analysis is objective and easy to compute, and in the last ten years it has gained increasing recognition as a far more valid index of syntactic complexity than other measures, including sentence length. A particularly attractive feature of the T-unit as an index of syntactic maturity was revealed by O'Donnell, Norris, and Griffin (1967); in their study of the syntax of the oral and written language of elementary schoolchildren, these researchers noted a close relationship between T-unit length and the number of sentence-combining transformations required to generate a T-unit. Differential mean length of T-unit, then, appears to reflect the relative degree to which users exploit the transformational resources of English.

Altogether, measures on six dependent variables were computed for each sample. These variables were: words per T-unit, ratio of clauses (main and subordinate) per T-unit, words per clause, adjective clauses per 100 T-units, adverb clauses per 100 T-units, and noun clauses per 100 T-units.

Table 1 (see Appendix) presents a comparison of the means of the subjects' classroom language and their speech among linguistic peers. The data as measured by all six dependent variables indicates an overall process of syntactic simplification in the classroom language. The subjects spoke in shorter clauses and used fewer subordinate clauses per T-unit when addressing their students than they did when speaking to highly proficient interlocutors. Multivariate analysis of variance performed on the data revealed that the overall difference in syntactic complexity was highly statistically significant ($p = < 0.0001$).

The next step in the analysis involved the comparison of the oral classroom language used from level to level. Table 2 compares mean performance of the subjects according to the level at which they were teaching. What emerges from the data is an unmistakable relationship between the syntactic complexity of the subjects' classroom language and the level of proficiency of their students. At any level, the syntax of the teachers' oral classroom language is more complex than at the level immediately below it and less complex than at the level immediately above it; and this is true for every one of the six criterion variables.

Table 3 compares the same data; here, however, the syntactic complexity of the teachers' classroom language used in the Advanced classes serves as the index of comparison. Let us briefly consider, by way of illustration, the two most different levels, the Beginner (L_1) and the Advanced (L_4). At L_1, the two subjects used T-units whose mean length was only 52% as great as the average T-unit used by the two teachers at L_4. The mean length of clauses used by the subjects teaching at L_1 was only 70% of the mean clause length in the data of the two subjects teaching at L_4. Finally, the difference in the ratio of clauses per T-unit at the two levels also indicates the difference in the language

used by the teachers at these levels. It should be noted that since every T-unit contains one main clause, the minimum possible ratio of clauses per T-unit is 1.00. The subjects teaching at L_4, then, used subordinate clauses roughly nineteen times as often as did their counterparts teaching students with no proficiency in English at the time classes began.

Multivariate analysis of the data revealed the following: (1) the level of proficiency which a class of students was assumed to have is a statistically significant ($p = <0.0227$) factor determining the syntactic complexity of the classroom language used by the teachers, and (2) the syntactic complexity of the oral language used by a teacher at one level is significantly less than the mean performance of the teachers teaching at more advanced levels (the only exception was between the Intermediate and Advanced levels, where the same trend was apparent, but not to a statistically significant degree).

Earlier, the question of whether the syntactic adjustments made by teachers in addressing adult second language learners in the classroom can be shown to exist and whether these adjustments move progressively towards greater approximation of the full adult target language norm. From the data obtained, the answer to both parts of the question is affirmative. What, then, is the relationship between these adjustments which second language teachers make in the target language for what are presumably both communicative and pedagogical purposes in their classroom language and the development of interlanguage in second language learners?

It is the premise of this paper that interlanguage results at least in part from the interaction of learner strategies and the sucessively less simplified "varieties" of the target language---in other words, the successively less simplified linguistic input---to which second language learners are exposed over the course of a formal language learning program. At each successive stage in a formal language learning program which adheres, as most do, to the principle of gradation---that is, in which course materials and, as the data from the present study suggests, the teachers' classroom language involve a progression from usage of simple structures alone to the increased use of more complex ones---the learner is exposed to primary linguistic data which increasingly exploits the transformational resources of the target language. His/her transitional grammar---the interlingual system which can be characterized as the product of the hypotheses formed by the learner on the basis of the primary linguistic data---will at any point correctly generate at the maximum the total number of structures and transformational processes which the learner has had the opportunity to hear or see used in the target language. As the language to which he/she is exposed provides data on how a previously unknown structure or transformational process is manifested in the target language, the learner can revise his/her grammar of the language. The important point is that changes in a learner's interlingual system are at least in some cases motivated by exposure to the introduction into the primary linguistic data of utterances containing "new" structures and/or transformational processes.

This view of the dynamics of the formal second language learning process allows for a distinction between two fundamental interlingual error-types: (1) those errors which result from the misapplication of rules which the learner may be assumed to have had the opportunity to deduce, and (2) those which represent the learner's attempt to fill in his/her gaps in training with what he/she already knows in either his/her native language or the target language.

Errors of the second type---even those which we are confident in assuming are somehow related to the learner's native language background---have been characterized by Newmark and Reibel (1968) as resulting from "ignorance." That notion will now be expanded by returning to the data from the present study and focusing on the occurrence in the teachers' oral classroom language of utterances incorporating one or more of the following three transformational processes: passivization, relativization, and question-embedding.

Table 4 compares the frequency of occurrence by level of these processes in the sentences spoken by the subjects. The numbers in parentheses refer to the number of incorrect applications of a particular transformation in the samples; the ungrammatical or semi-grammatical strings thus generated can be viewed as typical of actual linguistic performance errors which any speaker of a language, however proficient he/she is, will occasionally make.

It can be seen from Table 4 that at any level, the frequency of occurrence of any of these three transformational processes in the teachers' classroom language is greater than at the level(s) below and less than at the level(s) above it. Assuming the representativeness of the samples, it can be asserted that learners at a particular level will be exposed to more data on which to base an hypothesis about the way that a particular transformational process operates in the target language than they were at a less advanced level. We can also see that certainly in the case of the students in the Beginner class, any attempt on their part to use relativization or passivization---and probably question-embedding, for that matter---must be based on what Newmark and Reibel have called "ignorance." Their errors can in no way be considered the result of their having misformed or misapplied a "rule" deduced from primary linguistic data in the target language.

This interpretation differs from one in which the use, for example, of subject-verb inversion in embedded questions is invariably explained as an overgeneralization of the normal question-formation process. If a learner has been sufficiently exposed to the transformational process involved in question-embedding---and by exposure is meant exposure to utterances in which question-embedding has taken place, and not to a formal statement of the nature of the process---and persists in using subject-verb inversion on a global basis, this feature of his/her interlanguage may well be the result of some learner/teaching/communication strategy from which interlingual errors are typically thought to result. At a given stage in his/her language learning experience, however, a learner may simply not have been exposed to data in which a particular transformational process has been correctly applied a sufficiently large

number of times, and the nature of the "error" may thus be one of genuine ignorance on the part of the learner.

Now, it might be claimed that the premise just set forth is empirically untestable in the sense that there is virtually no way to determine what structures and processes appear in the linguistic input which a learner is exposed to as he/she acquires the target language, or the frequency of occurrence of these structures and processes. After all, the students in the classes taught by the subjects in the present study were living in the target culture; even if we accept the language samples analyzed as totally reflective of the total classroom linguistic performance of their teachers, the nature of the linguistic input which the students received outside the classroom cannot be ascertained. The argument is valid up to a point, though it can be countered somewhat by pointing out that there are many formal language learning settings where contact with speakers of and taped or written materials in the target language is minimal or unavailable. In these cases, the classroom language of the foreign language teacher may indeed represent the major or only raw linguistic data to which learners are exposed.

Nevertheless, at this point it should also be stated that a suitable answer to the question of what constitutes sufficient exposure to a target structure or process for it to be learned is simply not available as yet. There is evidence, in fact, from first language acquisition studies to suggest that the order of acquisition of structures does not correlate perfectly with the relative frequency of exposure to those structures. As regards acquisition of past tense forms, for example, it has been claimed (Slobin, 1971) that children are particularly sensitive to regularities. Once they learn the past tense morpheme which is used with weak verbs, they overgeneralize it even to strong verbs whose irregular past tense forms they had already learned. The same phenomenon may well apply in second language learning and would thus add an additional level of complexity to the task of explaining the second language acquisition process and the nature of learner errors. Even if this factor is disregarded, the most that can be said at this point is that what constitutes sufficient exposure for a structure or process to be learned in the first place probably varies from structure to structure and from learner to learner.

To summarize, it should be said that in contrast to the majority of recent studies which have investigated the development of interlingual systems with the focus primarily on the learner, the present study has examined the potential factor of teachers' classroom language in shaping the development of interlanguage. In view of the observation that like foreign language materials, the oral language which teachers' use in the classroom is geared to the level of proficiency which learners at a particular level are assumed to have, it is concluded that the development of the formal second language learner's interlanguage through a series of relatively transient stages which increasingly approximate the full adult grammar of the target language can be viewed as a process paralleling and in part resulting from his/her exposure to target language data which itself increasingly incorporates and illustrates the transformational operations which characterize the target language as it is used among fully proficient speakers.

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APPENDIX

TABLE 1. COMPARISON OF SYNTACTIC COMPLEXITY OF SUBJECTS' BASELINE (PRACTICUM CLASS MEETINGS) LANGUAGE AND THEIR ORAL CLASSROOM LANGUAGE

	SOURCE OF LANGUAGE SAMPLE	
VARIABLE	BASELINE (N = 8)	ESL CLASSROOM (N = 24)
w/T	10.97	6.19
c/T	1.60	1.20
w/c	6.84	5.10
AD/100	11.59	2.54
AV/100	20.27	5.33
N/100	28.54	11.16

w/T = words per T-unit
c/T = clauses per T-unit
w/c = words per clause
AD/100 = adjective clauses per 100 T-units
AV/100 = adverb clauses per 100 T-units
N/100 = noun clauses per 100 T-units

TABLE 2. COMPARISON OF SYNTACTIC COMPLEXITY OF SUBJECTS' ORAL CLASSROOM LANGUAGE BY LEVEL

LEVEL	VARIABLE					
	w/T	c/T	w'c	AD/100	AV/100	N/100
L_1 (Beginner) (N = 6)	4.30	1.02	4.20	0.00	0.76	1.60
L_2 (Upper Beginner) (N = 6)	5.75	1.14	5.04	1.46	3.64	6.92
L_3 (Intermediate) (N = 6)	6.45	1.24	5.18	2.26	8.40	13.54
L_4 (Advanced) (N = 6)	8.26	1.38	5.98	6.47	8.51	20.91
$\bar{X}_L$ (N = 24)	6.19	1.20	5.10	2.54	5.33	11.16

TABLE 3. COMPARISON OF SYNTACTIC COMPLEXITY OF SUBJECTS' ORAL CLASSROOM LANGUAGE BY LEVEL (INDEX OF COMPARISON = L_4)

LEVEL	VARIABLE					
	w/T	c/T	w/c	AD/100	AV/100	N/100
L_1 (Beginner) (N = 6)	0.52	0.74	0.70	0.00	0.09	0.08
L_2 (Upper Beginner) (N = 6)	0.70	0.83	0.84	0.23	0.43	0.33
L_3 (Intermediate) (N = 6)	0.78	0.90	0.87	0.35	0.99	0.65
L_4 (Advanced) (N = 6)	1.00	1.00	1.00	1.00	1.00	1.00

TABLE 4. COMPARISON OF OCCURRENCES OF PASSIVIZATION, RELATIVIZATION, AND QUESTION-EMBEDDING PROCESSES IN SUBJECTS' ORAL CLASSROOM LANGUAGE BY LEVEL

	TRANSFORMATIONAL PROCESS		
LEVEL	Passivization	Relativization	Question-Embedding
L_1	0	0	2 (1)*
L_2	1 (1)	8	16 (2)
L_3	6	10	30 (1)
L_4	7	25	37

* The numbers in parentheses indicate occurrences of misapplications of a transformational process.